| THE BRAIN: UNDERSTANDING NEUROBIOLOGY THROUGH THE STUDY OF ADDICTION | | |
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| **Montana Benchmarks: Science – End of Grade 12** | | |
| **Lesson** | **Standard** | **Benchmark** |
| **3, 4** | **1.1** | Generate a question, identify dependent and independent variables, formulate testable, multiple hypotheses, plan an investigation, predict its outcome, safely conduct the scientific investigations, and collect and analyze data. |
| **3, 4** | **1.2** | Select and use appropriate tools including technology to make measurements (in metric units), gather, process and analyze data from scientific investigations using appropriate mathematical analysis, error analysis, and graphical representation. |
| **3, 4** | **1.3** | Review evidence, communicate and defend results, and recognize that the results of a scientific investigation are always open to revision by further investigations (e.g., through graphical representation or charts). |
| **1, 3, 4** | **1.4** | Analyze observations and explain with scientific understanding to develop a plausible model (e.g., atom, expanding universe). |
| **3, 4** | **1.5** | Identify strengths, weaknesses, and assess the validity of the experimental design of an investigation through analysis and evaluation. |
| **1, 3, 4** | **1.6** | Explain how observations of nature form an essential base of knowledge among the Montana American Indians. |
| **2, 3, 4** | **2.3** | Describe the major features associated with chemical reactions, including (a) giving examples of reactions important to industry and living organisms, (b) energy changes associated with chemical changes, (c) classes of chemical reactions, (d) rates of reactions, and (e) the role of catalysts. |
| **4** | **3.4** | Predict and model the interaction of biotic and abiotic factors that affect populations through natural selection, and explain how this contributes to the evolution of species over time. |
| **3, 4** | **5.1** | Predict how key factors (e.g., technology, competitiveness, and world events) affect the development and acceptance of scientific thought. |
| **1, 3, 4** | **5.2** | Give examples of scientific innovation challenging commonly held perceptions. |
| **All lessons** | **5.3** | Evaluate the ongoing, collaborative scientific process by gathering and critiquing information. |
| **1, 5** | **5.4** | Analyze benefits, limitations, costs, consequences, and ethics involved in using scientific and technological innovations (e.g., biotechnology, environmental issues). |
| **3, 4, 5** | **5.5** | Explain how the knowledge of science and technology applies to contemporary Montana American Indian communities (e.g., natural resources development, management and conservation). |
| **3, 4, 5** | **6.1** | Analyze and illustrate the historical impact of scientific and technological advances, including Montana American Indian examples. |
| **1, 3, 4, 5** | **6.2** | Trace developments that demonstrate scientific knowledge is subject to change as new evidence becomes available. |
| **1, 3, 4, 5** | **6.3** | Describe, explain, and analyze science as a human endeavor and an ongoing process. |

| Montana DRAFT Grade Level Expectations (January, 2007): Science – Grades 9 & 10 | | |
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| **Lesson** | **Standard** | **GLE** |
| **3, 4** | **1** | Generates testable questions, safely designs and conducts controlled investigations, uses SI (metric system), makes logical inferences based on observations, interprets data by analyzing the strengths and weaknesses in an investigation design, modifies investigation design based upon experimentation, and communicates results. Identifies that observation is the key inquiry process used by Montana American Indians. |
| **2, 3** | **2** | Uses physical, mental, conceptual, and simple mathematical models to investigate classroom and group- generated problems and/or questions about: a. basic chemical phenomena including atomic theory and interactions of matter, b. basic physical phenomena including kinematics and energy transformations. |
| **2, 3, 4** | **3** | Organizes, classifies, and describes interactions of the biotic and abiotic parts of the biosphere as well as the natural history of interactions of life on Earth and uses these skills to recognize and help solve problems ranging from the sub-cellular level through the ecosystem level. |
| **3, 4, 5** | **5** | Using methods of scientific inquiry, identifies and communicates, through a variety of means, connections and interactions among technology, science, and society including how these have impacted the Montana American Indian. |
| **1, 3, 4, 5** | **6.A** | Makes decisions about scientific and social issues based on observations, data, analysis, and knowledge of the natural world, and communicates those decisions to others. |
| **4, 5** | **6.B** | Identifies the positive and negative impacts of past, present, and future technological and scientific advances and with direction, gives possible solutions to problems that affect local, regional, and global communities. |
| **Montana Grade Level Expectations: Mathematics – Grade 10** | | |
| **Lesson** | **Standard** | **GLE** |
| **3, 4** | **1** | Selects and uses appropriate processes (e.g., estimation, multiple steps) and technologies (e.g., paper and pencil, calculator, computer, data collection devices) to solve a variety of problems within and outside mathematics and communicates the results. |
| **3, 4** | **2** | Formulates and communicates logical arguments using appropriate mathematical ideas (e.g. mathematical terms, notations, generalizations) and reasoning. |
| **3, 4** | **3** | Uses real and complex numbers systems to solve mathematical problems. |
| **3, 4** | **4** | Applies functions, graphs, and algebraic concepts to solve real world problems. |
| **3, 4** | **7** | Makes reasonable predictions and decisions using data, basic probability, and statistics (e.g., tables, graphs, measures of central tendency, variability, correlation, or sampling). |
| **Montana Grade Level Expectations: Reading – Grade 10** | | |
| **Lesson** | **Standard** | **GLE** |

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| **All lessons** | **1** | Makes and revises predictions and identifies connections within material and between material and pervious information/experiences. |
| **All lessons** | **2** | Paraphrases stated and inferred main ideas, identifies supporting evidence and responds using a variety of modes. |
| **All lessons** | **3** | Applies decoding strategies to understand grade-level text. |
| **All lessons** | **4** | Applies a few strategies to interpret, analyze and evaluate the language, literary elements, literary devices, and overall intent of print and non-print material. |
| **All lessons** | **5** | Uses a substantial reading vocabulary appropriate to grade-level. |
| **All lessons** | **8** | Selects, evaluates compares, analyzes, and uses appropriate print and non-print material to meet a variety of reading purposes (e.g., reference material, pamphlets, electronic information, schedules, maps, technical manuals). |
| **All lessons** | **11** | Logically gathers, analyzes, synthesizes and responds to information from a variety of sources. |
| **Montana Benchmarks: Writing – End of Grade 12** | | |
| **Lesson** | **Standard** | **Benchmark** |
| **4, 5** | **1.1** | Organize text in paragraphs with clear beginning, middle, and end, using effective transitions and logical sequence. |
| **3, 4, 5** | **1.2** | Develop and elaborate main ideas through relevant and specific supporting details. |
| **2, 3, 4, 5** | **1.3** | Demonstrate purposeful control of personal voice, sentence structure, and word choice. |
| **2, 3, 4, 5** | **1.4** | Apply conventions of standard written English (e.g., spelling, punctuation, usage) appropriate for grade level and purpose. |
| **3, 5** | **2.5** | Share/publish a legible final product. |
| **2, 3, 4, 5** | **4.1** | Identify and articulate the purpose for their writing and write appropriately. |
| **2, 3, 4, 5** | **4.2** | Choose audiences (e.g., self, peers, adults) appropriate to purposes and topics. |
| **3, 4, 5** | **4.3** | Experience writing in various genres (e.g., expository and persuasive writing). |
| **3, 5** | **5.2** | Write using characteristics of different forms. |
| **2, 3, 4, 5** | **6.1** | Pose questions or identify problems. |
| **2, 3, 4, 5** | **6.2** | Find, evaluate, and use a variety of technologies and information sources. |
| **2, 3, 4, 5** | **6.3** | Identify and investigate alternative explanations or solutions, and use criteria to draw and defend conclusions based on their analysis and evaluation of the information. |
| **2, 3, 4, 5** | **6.4** | Share information in appropriate ways for intended audiences. |
| **Montana Benchmarks: Health Enhancement – End of Grade 12** | | |
| **Lesson** | **Standard** | **Benchmark** |
| **3, 4, 5** | **1.1** | Analyze how attitudes and behaviors can impact health maintenance, disease prevention, and injury. |

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| **3, 4, 5** | **1.2** | Explain the impact of personal health behaviors on the functioning of body systems, including the reproductive system. |
| **3, 4, 5** | **1.3** | Analyze how the environment, public health policies, government regulations, research, and medical advance influences personal and community health. |
| **4** | **1.4** | Develop personal health-enhancing strategies that encompass substance abuse, nutrition, exercise, sexual activities, injury/disease prevention, including HIV/AIDS prevention and stress management. |
| **3, 4, 5** | **1.5** | Advocate for personal, family, and community health. |
| **3, 4** | **5.1** | Utilize various problem-solving strategies when making health decisions related to needs and risks of young adults. |
| **3, 4, 5** | **5.2** | Predict immediate and long-term impacts of health decisions on the individual, family and community. |
| **All lessons** | **5.6** | Locate, evaluate, and utilize credible health information. |
| **All lessons** | **6.1** | Demonstrate skills for communicating effectively with family, peers, and others. |
| **3, 4, 5** | **6.2** | Demonstrate ways to communicate care, consideration, and respect of self and others. |